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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,178

12/02/2003

Richard E. Murrish

7784-000622

2570

27572

7590

12/06/2005

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EXAMINER

GARLAND, STEVEN R

ART UNIT

PAPER NUMBER

2125

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/726,178	MURRISH ET AL.	
	Examiner	Art Unit	
	Steven R. Garland	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/23/05, 7/13/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-18 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-18 and 20-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1,3-18, and 20-27 are pending. Claims 2 and 19 have been cancelled.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 3-18, and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cahuzac 5,914,002.

Cahuzac teaches making composite parts by the use of superposed plies (abstract). Cahuzac also teaches the use of modeling, computer aided design, different orientations and materials (metals, plastics) giving different properties for the composite layers, dividing the composite object into multiple layers, use of a stacking order and positioning of a succeeding ply relative to a preceding ply, and use of a

computer with display (5). See the abstract, figures; col. 2, lines 19-67; col. 3, lines 1-15; col. 4, lines 28-63; col. 5, lines 39-64.

Cahuzac however does not specifically state that a tool shape is used, but does teach generating a special profile on two faces and that an underlying layer shapes the overlying layer.

It would have been obvious to one of ordinary skill in the art to modify Cahuzac to model the special profile by either regarding the central support or the central support with a special shape as the tool, since the special profile is formed on this "tool" which determines the starting shape. Also any sub-layer inherently serves as a tool to shape a subsequently formed layer. Further since the CAD model is formed of layers it inherently has native shapes defined by the data used to produce the layers and also a succeeding layer which is smaller than the preceding layer is trimmed. The choice of the type of object being fabricated clearly dictates whether a succeeding layer is trimmed or not, since the physical shape of the object dictates the shape of the layers. Note col. 4, lines 28-38.

In response to applicant's arguments, Cahuzac teaches both modeling and manufacturing a 3D object. The model is three dimensional in that it has XYZ coordinates associated with it and plies (layers) are used in both the model and in manufacturing the object. See col. 2, lines 19-67. The layers and associated surfaces are CAD native geometry objects as applicant uses the term (note paragraph 0027 of the instant specification). As pointed out above the geometry of the object determines if the layers are trimmed or not such as for example if a pyramid is being formed the plies

are successively smaller (as well as offset) while if an inverted pyramid is being formed the layers are successively larger (as well as offset).

5. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cahuzac 5,914,002 in view of Matheson 6,718,218.

Cahuzac teaches making composite parts by the use of superposed plies (abstract). Cahuzac also teaches the use of modeling , computer aided design, different orientations and materials (metals, plastics) giving different properties for the composite layers, dividing the composite object into multiple layers, use stacking order and positioning of a succeeding ply relative to a preceding ply, and use of a computer with display (5). See the abstract, figures; col. 2, lines 19-67; col. 3, lines 1-15; col. 4, lines 28-63; col. 5, lines 39-64.

Cahuzac however does not specifically state that a tool shape is used, but does teach generating a special profile on two faces and that an underlying layer shapes the overlying layer.

It would have been obvious to one of ordinary skill in the art to modify Cahuzac to model the special profile by either regarding the central support or the central support with a special shape as the tool, since the special profile is formed on this "tool" which determines the starting shape. Also any sub-layer inherently serves as a tool to shape a subsequently formed layer. Further since the CAD model is formed of layers it inherently has native shapes defined by the data used to produce the layers and also a succeeding layer which is smaller than the preceding layer is trimmed. The choice of the type of object being fabricated clearly dictates whether a succeeding layer

is trimmed or not, since the physical shape of the object dictates the shape of the layers. Note col. 4, lines 28-38.

Cahuzac also does not specifically state that a low end viewer can be used.

Matheson teaches a low end viewer to view CAD data. See abstract; col. 1, lines 28-46; col. 2, lines 10-18; col. 4, lines 6-12; and the claims.

It would have been obvious to one of ordinary skill in the art to modify Cahuzac in view of Matheson and allow the use of a low end viewer of the CAD data so as to provide a less expensive system.

In response to applicant's arguments, Cahuzac teaches both modeling and manufacturing a 3D object. The model is three dimensional in that it has XYZ coordinates associated with it and plies (layers) are used in both the model and in manufacturing the object. See col. 2, lines 19-67. The layers and associated surfaces are CAD native geometry objects as applicant uses the term. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R. Garland whose telephone number is 571-272-3741. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SRG
Steven R Garland
Examiner
Art Unit 2125

11/30/05

L. P. Picard

**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**